

B. Hazardous Organic NESHAP

6. Pursuant to Section 112(d) of the CAA, 42 U.S.C. § 7412(d), on April 22, 1994, EPA promulgated the National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry. This rule is commonly known as the Hazardous Organic NESHAP and it established maximum achievable control technology (MACT) standards to regulate the emissions of organic HAPs from production processes located at major sources.

7. The Hazardous Organic NESHAP is comprised of three Subparts: 1) Subpart F at 40 C.F.R. §§ 63.100-107, Subpart G at 40 C.F.R. §§ 63.110-63.153, and Subpart H at 40 C.F.R. §§ 63.160-63.183. *See* 59 Fed. Reg. 19454 (1994).

8. 40 C.F.R. §§ 63.100(a) in Subpart F sets forth applicability provisions, definitions, and other general provisions that are applicable to Subparts G and H.

9. Except as provided in 40 C.F.R. § 63.100(b)(4) and in 40 C.F.R. §§ 63.100(c), Subparts F, G, and H apply to “chemical manufacturing process units” meeting all criteria specified in 40 C.F.R. § 63.100(b)(1), (b)(2), and (b)(3). *See* 40 C.F.R. § 63.100(b).

10. A “Chemical manufacturing process unit” is the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. For the purpose of the Hazardous Organic NESHAP, “chemical manufacturing process unit” includes air oxidation reactors and their associated product separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations; associated recovery devices; and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices (PRVs), sampling connection systems, open ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing process unit is identified by its primary product. *See* 40 C.F.R. § 63.101(b).

11. For Subparts F, G, and H to apply to a “chemical manufacturing process unit:”

- a. 40 C.F.R. § 63.100(b)(1) requires that the chemical manufacturing process unit manufactures as a primary product one or more of the chemicals listed in:
 - i. Table 1 of Subpart F; or
 - ii. Tetrahydrobenzaldehyde (CAS Number 100-5-5); or
 - iii. Crotonaldehyde (CAS Number 123-73-9);
- b. 40 C.F.R. § 63.100(b)(2) requires that the chemical manufacturing process unit use as a reactant one or more of the organic HAPs listed in Table 2 of Subpart F; and
- c. 40 C.F.R. § 63.100(b)(3) requires that the chemical manufacturing process unit is located at a plant site that is a major source as defined in Section 112(a) of the CAA.

12. The owner or operator of a source subject to Subpart F is required to comply with the requirements of Subparts G and H. *See* 40 C.F.R. § 63.102(a).

13. The provisions of Subpart G apply to all process vents, storage vessels, transfer racks, wastewater streams, and in-process equipment subject to 40 C.F.R. § 63.149 within a source subject to subpart F.

14. 40 C.F.R. § 63.119(a)(1) requires that each Group 1 storage vessel storing a liquid for which the maximum true vapor pressure of the total organic hazardous air pollutants in the liquid is less than 76.6 kilopascals, the owner or operator shall reduce HAP emissions to the atmosphere by one of the following means: 1) operating and maintaining a fixed roof and internal floating roof; 2) an external floating roof; 3) an external floating roof converted to an internal floating roof; 4) a closed vent system and control device, routing the emissions to a process or a fuel gas system; or 5) vapor balancing in accordance with the requirements in paragraph (b), (c), (d), (e), (f), or (g) of this section, or equivalent as provided in §63.121 of this subpart.

15. For owners or operators who elect to use a fixed roof and an internal floating roof to comply with the requirements of 40 C.F.R. § 63.119(a)(1), the fixed roof and internal floating roof must comply with the requirements of 40 C.F.R. §63.119 (b)(1) through (b)(6).

16. The provisions of Subpart H apply to affected pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or closed vent systems in organic HAP service 300 hours or more during the calendar year. *See* 40 C.F.R. § 63.160(a).

17. 40 C.F.R. § 63.162(c) requires that each piece of equipment in a process unit to which this subpart applies shall be identified such that it can be distinguished readily from equipment that is not subject to this subpart. Identification of the equipment does not require physical tagging of the equipment.

18. “Equipment” means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, and instrumentation system in organic hazardous air pollutant service; and any control devices or systems required by this subpart. *See* 40 C.F.R. § 63.101.

19. A “process unit” means a chemical manufacturing process unit as defined in subpart F, a process subject to the provisions of subpart I, 40 C.F.R. §§ 63.190-193 , or a process subject to another subpart in 40 C.F.R. part 63 that references Subpart F.

20. An “open-ended valve or line” means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping. *See* 40 C.F.R. § 63.161.

Leak Detection and Repair

21. An "equipment leak" is defined as emissions of organic HAP from a connector, pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, surge control vessel, bottoms receiver, or instrumentation system in organic HAP service. *See* 40 C.F.R. § 63.101.

22. A "first attempt at repair" means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere, followed by monitoring as specified in 40 C.F.R. § 63.180 (b) and (c), as appropriate, to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired. *See* 40 C.F.R. § 63.161.

23. Except during pressure releases, 40 C.F.R. § 63.165(a) requires that each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background (except as provided in 40 C.F.R. § 63.165(b)), as measured by the method specified in 40 C.F.R. § 63.180(c).

24. In all cases where Subpart H requires an owner or operator to repair leaks by a specified time after the leak is detected, it is a violation of Subpart H to fail to take action to repair the leaks within the specified time. If action is taken to repair the leaks within the specified time, failure of that action to successfully repair the leak is not a violation of Subpart H. However, if the repairs are unsuccessful and a leak is detected, the owner or operator must take further action as required by applicable provisions of Subpart H. *See* 40 C.F.R. § 63.162(h).

Monitoring and Inspection

25. 40 C.F.R. § 63.168(b) requires that all valves in gas/vapor service and in light liquid service shall be monitored at the intervals specified in 40 C.F.R. § 63.168(c) and (d), except as provided in 40 C.F.R. §§ 63.171, 63.177, 63.178, and 63.179.

26. Each valve in gas service or in light liquid service shall be monitored on a quarterly basis. *See* 40 C.F.R. § 63.168(c).

27. 40 C.F.R. § 63.174(c)(1)(i) requires that each connector that has been opened or otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first 3 months after being returned to organic hazardous air pollutant service, except as provided in 40 C.F.R. § 63.174 (c)(1)(ii).

28. Pursuant to 40 C.F.R. § 63.180(b)(1), monitoring required under 40 C.F.R. § 63.180(b)(1) shall comply with Method 21 of 40 C.F.R. Part 60, Appendix A. This is referred to as "Method 21 Monitoring."

C. Group IV Polymers and Resins NESHAP

29. Pursuant to Section 112(d) of the CAA, 42 U.S.C. § 7412(d), on September 12, 1996 EPA promulgated the National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins at 40 C.F.R. Part 63, Subpart JJJ, 40 C.F.R. §§ 63.1310-336 (the Group IV Polymers and Resins NESHAP). *See* 61 Fed. Reg. 48229 (1996).

30. 40 C.F.R. § 63.1310 in the Group IV Polymers and Resins NESHAP sets forth applicability provisions, definitions, and other general provisions that are applicable to an affected source subject to the Group IV Polymers and Resins NESHAP.

31. The Group IV Polymers and Resins NESHAP applies to each affected source consisting of “thermoplastic product process units” (TPPU), and their associated equipment, meeting all criteria specified in 40 C.F.R. § 63.1310(a)(1), (a)(2), (a)(3), and (a)(4). *See* 40 C.F.R. § 63.100(a).¹

32. A “thermoplastic product process unit” means a collection of equipment assembled and connected by hard-piping or ductwork, used to process raw materials and to manufacture a thermoplastic product as its primary product. This collection of equipment includes unit operations; recovery operations equipment, process vents; equipment identified in 40 C.F.R. § 63.149; storage vessels, as determined in 40 C.F.R. § 63.1310(g); and the equipment that is subject to the equipment leak provisions as specified in 40 C.F.R. § 63.1331. Utilities, lines and equipment not containing process fluids, and other non-process lines, such as heating and cooling systems which do not combine their materials with those in the processes they serve, are not part of the thermoplastic product process unit. A thermoplastic product process unit consists of more than one unit operation. *See* 40 C.F.R. § 63.1312(b).

33. 40 C.F.R. § 63.1312(b) defines a “thermoplastic product” as one of the following types of products:

- a. ABS latex;
- b. ABS using a batch emulsion process;
- c. ABS using a batch suspension process;
- d. ABS using a continuous emulsion process;
- e. ABS using a continuous mass process;
- f. ASA/AMSAN;
- g. EPS;
- h. MABS;
- i. MBS;
- j. nitrile resin;
- k. PET using a batch dimethyl terephthalate process;
- l. PET using a batch terephthalic acid process;
- m. PET using a continuous dimethyl terephthalate process;

¹ Except as provided in 40 C.F.R. § 63.1310(b), 40 C.F.R. § 63.1310(c), and 40 C.F.R. § 63.1310(d).

- n. PET using a continuous terephthalic acid process;
- o. PET using a continuous terephthalic acid high viscosity multiple end finisher process;
- p. Polystyrene resin using a batch process;
- q. Polystyrene resin using a continuous process;
- r. SAN using a batch process; or
- s. SAN using a continuous process.

34. The owner or operator of an affected source shall comply with the requirements of 40 C.F.R. §§ 63.119 through 63.123 and 40 C.F.R. § 63.148 for each storage vessels. *See* 40 C.F.R. § 63.1314(a).

35. The owner or operator of an affected source shall comply with the requirements of 40 C.F.R. §§ 63.113 through 63.118 for each continuous process vent. *See* 40 C.F.R. § 63.1315(a).

36. Except as specified in 40 C.F.R. § 63.1321(b) through (d), owners or operators of an affected source shall comply with the requirements in 40 C.F.R. §§ 63.1322 through 63.1327 for each batch process vent. *See* 40 C.F.R. § 63.1321(a).

37. On March 27, 2014, EPA updated the Group IV Polymers and Resins NESHAP to require that existing affected sources shall comply with the pressure relief device monitoring provisions of 40 C.F.R. § 63.1331(a)(9)(iii) no later than March 27, 2017. *See* 40 C.F.R. § 63.1311(d)(7).

38. Except as specified in 40 C.F.R. § 63.1331(a)(9)(iv), pressure releases to the atmosphere from pressure relief devices in organic HAP service are prohibited, and the owner or operator much comply with the requirements specified in 40 C.F.R. § 63.1331(a)(9)(i) and (ii). The owner or operator must also comply with the pressure release management requirements specified in 40 C.F.R. § 63.1331(a)(9)(iii)(A) and (B) for all pressure relief devices in organic HAP service. *See* 40 C.F.R. § 63.1331(a)(9).

39. 40 C.F.R. § 63.1331(a)(9)(iii)(A) requires that for each pressure relief device in organic HAP service, the owner or operator must equip each pressure relief device with a device(s) or use a monitoring system that is capable of:

- 1. Identifying the pressure release;
- 2. Recording the time and duration of each pressure release; and
- 3. Notifying operators immediately that a pressure release is occurring.

40. 40 C.F.R. § 63.1335 establishes recordkeeping, data retention and reporting requirements for the owner or operator of an affected source. 40 C.F.R. § 63.1335(e)(5) requires the submittal of a Notification of Compliance Status (NOC) for affected sources.

41. For pressure relief devices subject to the requirements of 40 C.F.R. § 63.1331(a)(9)(iii)(A), the owner or operator was required to submit the information listed in 40

C.F.R. § 63.1335(e)(5)(xii) in the NOC within 150 days after the first applicable compliance date for pressure relief device monitoring. *See* 40 C.F.R. § 63.1335(e)(5).

42. For pressure relief devices in organic HAP service, 40 C.F.R. § 63.1335(e)(5)(xii) requires a description of the device or monitoring system to be implemented, including the pressure relief devices and process parameters to be monitored (if applicable), a description of the alarms or other methods by which operators will be notified of a pressure release, and a description of the alarms or other methods by which operators will be notified of a pressure release, and a description of how the owner or operator will determine the information to be recorded under 40 C.F.R. § 63.1335(d)(10)(v)(B) and (C) (i.e., the duration of the pressure release and the methodology and calculations for determining of the quantity of total HAP emitted during the pressure release).

43. The owner or operator of an affected source shall submit Periodic Reports as specified in 40 C.F.R. § 63.1335(e)(6)(i) through (xiii).

44. If any pressure relief device in organic HAP service releases to the atmosphere as a result of a pressure release event, the owner or operator must calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in 40 C.F.R. § 63.1335(e)(6)(xii). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge. *See* 40 C.F.R. § 63.1331(a)(9)(iii)(B).

45. Except as specified in 40 C.F.R. § 63.1321(b) through (d), owners or operators of an affected source shall comply with the requirements in 40 C.F.R. §§ 63.1322 through 63.1327 for each batch process vent. *See* 40 C.F.R. § 63.1321(a).

D. Title V Requirements

46. EPA promulgated full approval of Ohio's Title V program on August 15, 1995. Ohio's Title V program became effective on October 1, 1995 *See* 60 Fed. Reg. 42045.

47. 40 C.F.R. § 70.1(b) requires all sources subject to the Title V operating permit program, including certain sources subject to standards under Section 112 of the CAA, to have a permit to operate which includes enforceable emission limitations and such other conditions as are necessary to assure compliance with all "applicable requirements" of the CAA and the requirements of the applicable SIP.

48. An "applicable requirement" includes any standard or other requirement under Section 112 of the CAA, which includes all applicable NESHAP requirements. *See* 40 C.F.R. § 70.2.

49. Operating requirements in the Notification of Compliance (NOC) required by 40 C.F.R. § 63.1335(e)(4)(ii)(L)(4)(iv)(C)(5) are "applicable requirements" for purposes of 40 C.F.R. Part 70 and shall be incorporated into the Title V permit.

50. 40 C.F.R. § 70.7(b) requires that the owner or operator of a Title V source shall not operate such source after the date that a timely and complete Title V permit application is required to be submitted, except in compliance with a permit issued under a Part 70 program.

Factual Background

51. INEOS ABS is a plastic polymer manufacturing plant located at 356 Three Rivers Parkway, Addyston, OH (Facility).

52. INEOS ABS was and is a “person,” as that term is defined in Section 302(e) of the CAA, 42 U.S.C. § 7602(e).

53. At all times relevant to this FOV, INEOS ABS’ Facility was and is a major source of HAPs, as defined in 42 U.S.C. § 7412(a)(1) and 40 C.F.R. § 63.2.

54. INEOS ABS was and is an “owner” and an “operator as those terms are defined in Section 112 of the CAA, 42 U.S.C. § 7412, and 40 C.F.R. § 63.2, of: 1) a “chemical manufacturing process unit” subject to the Hazardous Organic NESHAP, Subparts F, G, and H.

E. Hazardous Organic NESHAP

55. At all times relevant to this FOV, INEOS ABS is and was a “chemical manufacturing process unit” as defined in 40 C.F.R. § 63.101(b), meeting the applicability requirements for the Hazardous Organic NESHAP, Subparts F, G, and H.

56. When EPA promulgated the Hazardous Organic NESHAP on April 22, 1994, the Facility was a major source of HAPs, and thus subject to emission standards and other requirements of the Hazardous Organic NESHAP.

57. INEOS ABS meets the applicability requirements of Subpart H set forth in 40 C.F.R. § 63.160(a), because it contains affected pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or closed vent systems in organic HAP service 300 hours or more during the calendar year.

58. INEOS ABS’ Facility contains equipment in gas/vapor service subject to Hazardous Organic NESHAP, Subpart H. (40 C.F.R. § 63.161).

59. INEOS ABS’ Facility contains equipment in light liquid service subject Hazardous Organic NESHAP Subpart H. (40 C.F.R. § 63.161).

60. INEOS ABS is subject to the requirements of the Hazardous Organic NESHAP.

F. Group IV Polymers and Resins NESHAP

61. At all times relevant to this FOV, INEOS ABS is and was an affected source, defined as each group of one or more TPPUs and associated equipment subject to the Group IV Polymers and Resins NESHAP.

62. INEOS ABS meets the applicability requirements of the Group IV Polymers and Resins NESHAP set forth in 40 C.F.R. § 63.1310(a) because it contains affected emission points and equipment associated with each applicable group of one or more TPPU as specified in 40 C.F.R. § 63.1310 (a)(4)(i) through (vi).

63. INEOS ABS facility manufactures the following thermoplastic products as defined in the Group IV Polymers and Resins NESHAP: ABS, AMSAN, SAN, MABS, and MBS. *See* 40 C.F.R. § 63.1312(b).

64. INEOS ABS is subject to the requirements of the Group IV Polymers and Resins NESHAP.

65. To comply with the 2014 update to the Group IV Polymers and Resins NESHAP, INEOS completed installation on March 27, 2014 of vibration sensors on its PRVs to monitor when pressure release events are occurring.

G. Title V Requirements

66. On November 19, 2018 the Ohio Environmental Protection Agency issued Title V permit number P011937 to INEOS ABS (USA) Corporation for the Facility.

67. Pursuant to Title V permit P011937, INEOS ABS is required to comply with the applicable provisions of the Hazardous Organic NESHAP and the Group IV Polymers and Resins NESHAP.

68. INEOS ABS has elected to operate and maintain a fixed roof and internal floating roof on tanks A13, C1, and C5 (T005, T007, T011) to reduce organic HAP emissions from these emissions units in accordance with the requirements of 40 C.F.R. § 63.119(b).

69. INEOS received an extension pursuant to 40 C.F.R. § 63.1311(e) for one year to comply with the pressure relief device monitoring provisions required by 40 C.F.R. § 63.1311(d)(7). INEOS submitted a NOC with these provisions on 3/27/2018.

H. EPA's Information Requests and Inspection

70. From August 26th through August 28th, 2019, EPA inspected INEOS ABS's Facility (the Inspection). The Inspection focused on Leak Detection and Repair (LDAR) and used Toxic Vapor Analyzers to conduct Method 21 Monitoring at the Facility on August 27, 2019 and August 28, 2019.

71. During the Inspection, EPA requested and received documents from INEOS ABS including its LDAR Access Database for the Facility.

72. On November 23rd, 2020, EPA issued an information request to INEOS ABS pursuant to Section 114 of the CAA, 42 U.S.C. § 7414. EPA requested information concerning:

1) INEOS ABS' LDAR Program and LDAR Database, including equipment monitoring and repair data; and 2) INEOS ABS' acrylonitrile monitoring data.

73. As the owner and operator of a source subject to the Hazardous Organic NESHAP, Subpart F, INEOS ABS was required to comply at all times relevant to this FOV with the requirements of the Hazardous Organic NESHAP.

74. As the owners and operator of the source, INEOS ABS was required to comply at all times relevant to this FOV with the requirements of the Group IV Polymers and Resins NESHAP.

Violations

75. In 2017-2018, INEOS ABS violated 40 C.F.R. § 63.168(c) by failing to perform quarterly monitoring for 12 valves for the quarters ending on March 31, 2017, March 31, 2018, and December 31, 2018. The 12 valves are on the DN3 catalyst supply line (mixed with styrene) of emission unit group P015, a continuous polymerization operation.

76. In 2017-2018, INEOS ABS violated 40 C.F.R. § 63.174(c)(1)(i) by failing to perform monitoring within the first three months of being returned to organic hazardous air pollutant service for 26 connectors. The 26 connectors were in service during 01/21/2017-02/10/2017, 01/17/2018-02/07/2018, 09/23/2018-10/04/2018, and 10/26/2018-11/20/2018. The period of non-inspection for the 26 connectors was 01/01/2017 through 9/30/2019 and the connectors were not monitored until November 2019.

77. From August 28, 2019 to December 2, 2020, INEOS ABS violated 40 C.F.R. §§ 63.119(b) and 63.1331(a)(9) by failing to capture and control emissions from its A13 and C5 (T005, T011) tanks as follows:

| Tag ID | Process Unit | Class | Inspection Date | INEOS Net Reading (ppm) | EPA Reading (ppm) |
|--------|--------------|----------------|-----------------|-------------------------|-------------------|
| NA | A13 Tank | Emergency Vent | 8/28/19 | 2700 | 6000 |
| NA | C5 Tank | Hatch | 8/28/19 | 1500 | 2600 |
| 12595 | C5 AN Tank | RELIEF | 11/18/19 | 7198 | NA |
| 12597 | A13 Tank | RELIEF | 1/16/20 | 4630 | NA |
| 12597 | A13 Tank | RELIEF | 1/20/20 | 1273 | NA |
| 12597 | A13 Tank | RELIEF | 8/05/20 | 2765 | NA |

| | | | | | |
|-------|----------|--------|---------|------|----|
| 12597 | A13 Tank | RELIEF | 8/05/20 | 1798 | NA |
|-------|----------|--------|---------|------|----|

78. From August 28, 2019 through December 2, 2020, INEOS ABS violated 40 C.F.R. § 63.165(a) by failing to operate four pressure relief devices in gas/vapor service with an instrument reading of less than 500 ppm above background as follows:

| Tag ID | Process Unit | Class | Inspection Date | INEOS Net Reading (ppm) |
|--------|-----------------------|--------|-----------------|-------------------------|
| 12577 | DIN1 Spent MON tank | RELIEF | 8/13/20 | 5998 |
| 12554 | DIN2 Recycle/Stripper | RELIEF | 8/25/20 | 3148 |
| 12554 | DIN2 Recycle/Stripper | RELIEF | 8/25/20 | 2998 |
| 12587 | A8-A9 CN/DN/EM | RELIEF | 10/28/20 | 760 |
| 12587 | A8-A9 CN/DN/EM | RELIEF | 10/28/20 | 698 |
| 12700 | EM AN | RELIEF | 7/21/20 | 4091 |
| 12700 | EM AN | RELIEF | 7/21/20 | 2498 |

79. During the August 2019 inspection, INEOS ABS violated 40 C.F.R. § 63.1311(d)(7) by failing to have identified by March 27, 2017, each piece of equipment in a process unit to which the Group IV Polymers and Resins NESHAP applies, including PRVs and sensors. These include PRVs and sensors in styrene, 1-3-butadiene, and acrylonitrile service.

Environmental Impact of Violations

80. Breathing high concentrations of acrylonitrile contributes to a variety of health problems including nose and throat irritation, tightness in the chest, difficulty breathing, nausea, dizziness, weakness, headache, impaired judgement, and convulsions.

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